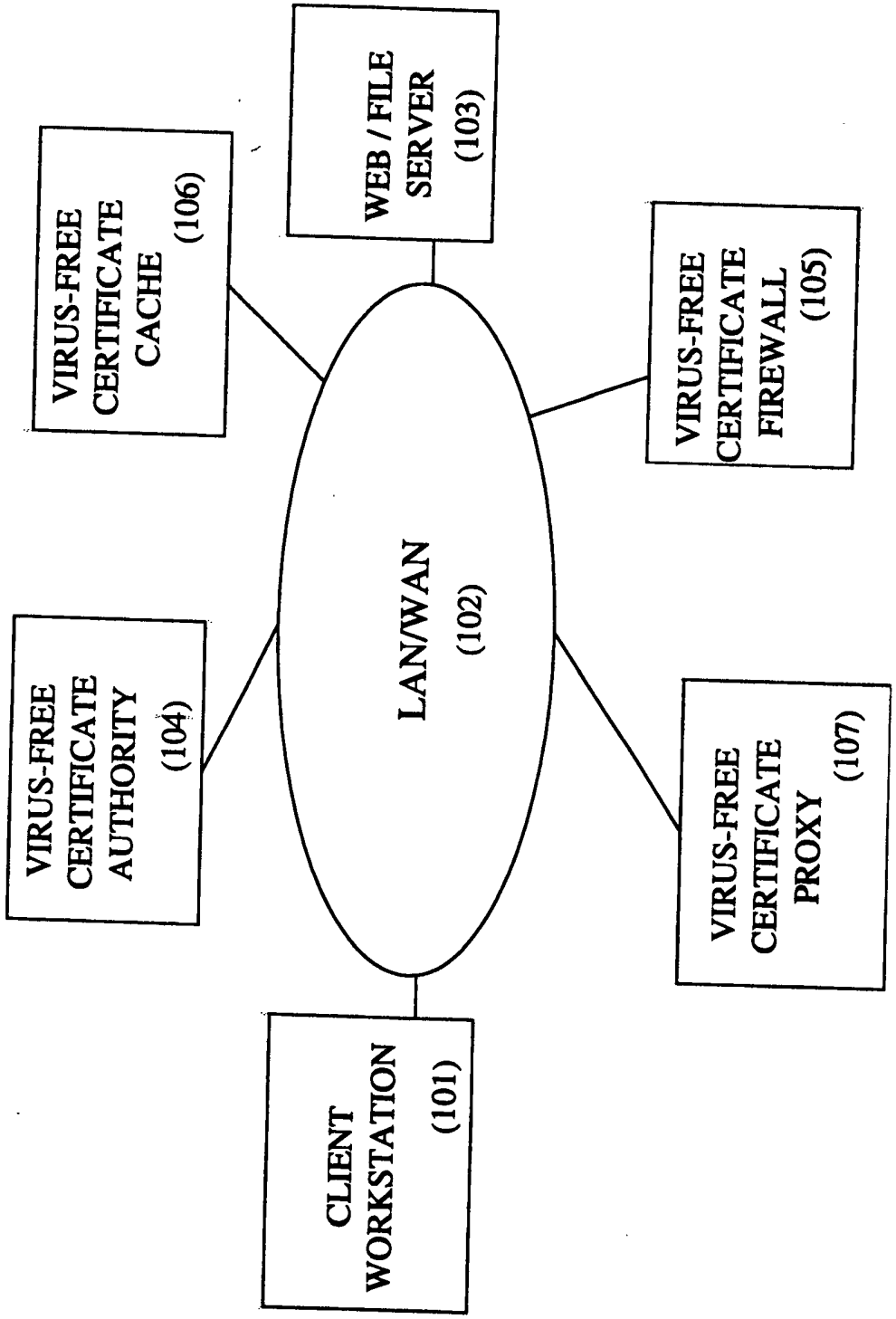
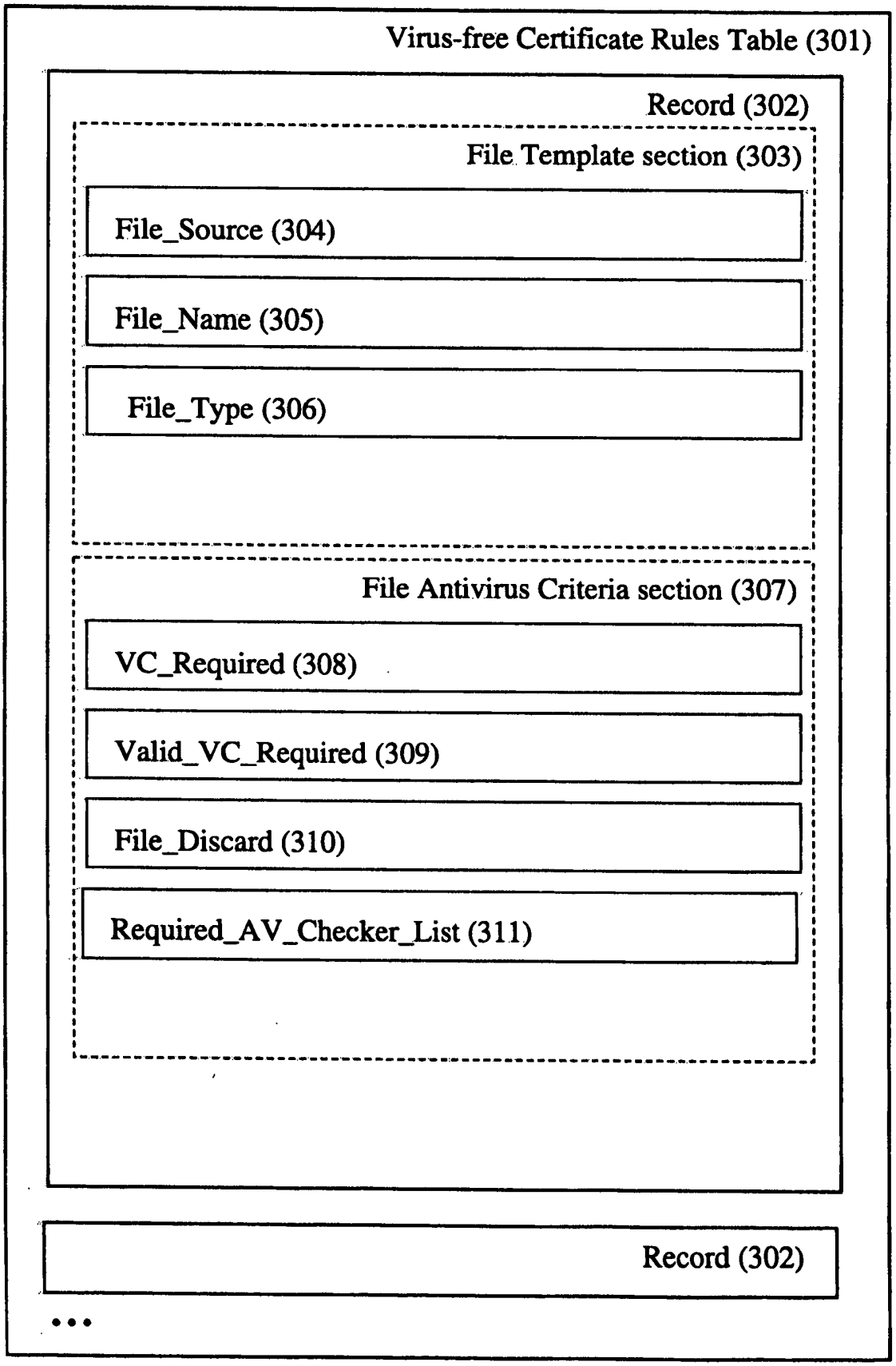
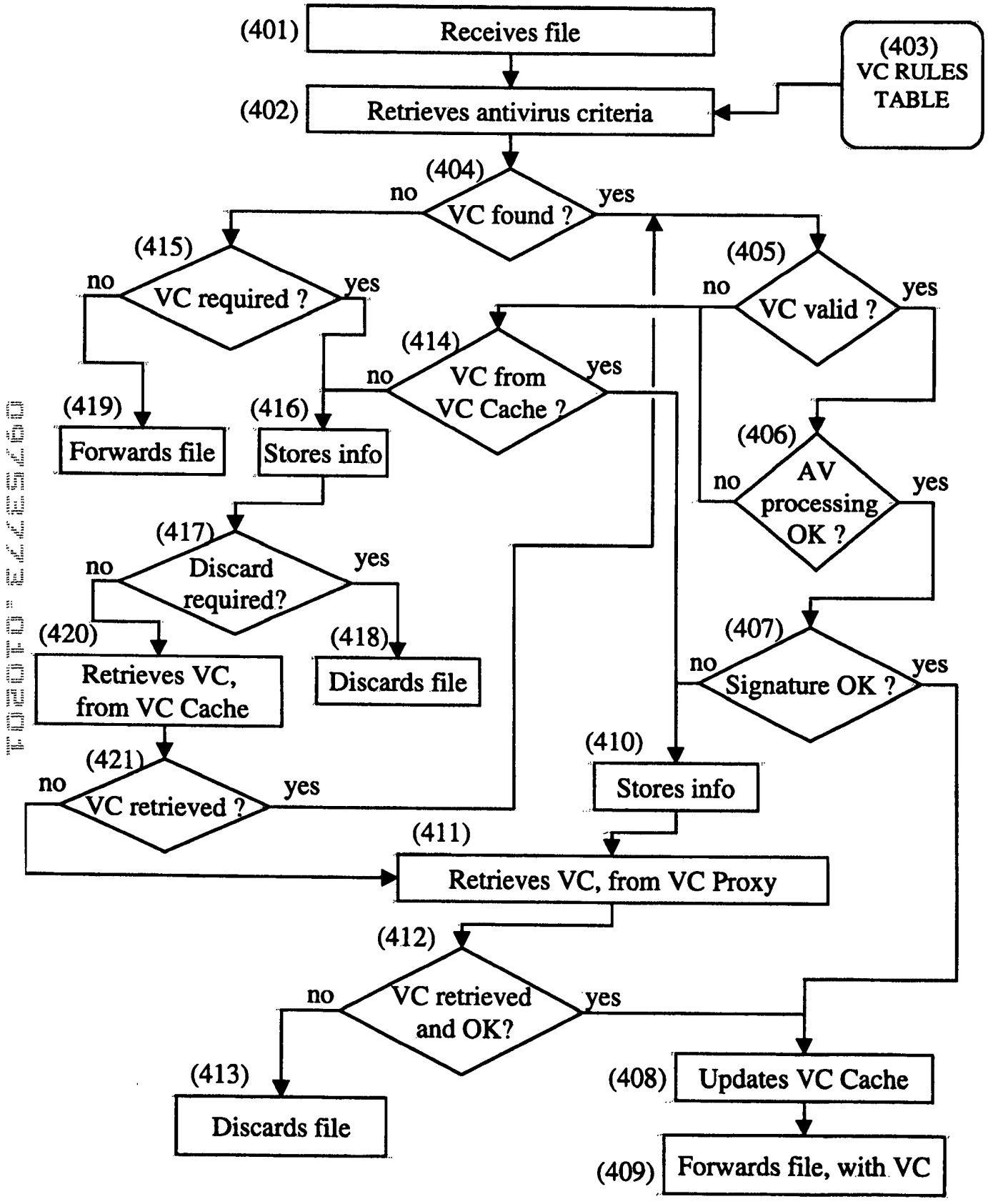

WEB / FILE SERVER (103)
VIRUS-FREE CERTIFICATE CACHE (106)
VIRUS-FREE CERTIFICATE FIREWALL (105)
LAN/WAN (102)
VIRUS-FREE CERTIFICATE AUTHORITY (104)
VIRUS-FREE CERTIFICATE PROXY (107)
CLIENT WORKSTATION (101)

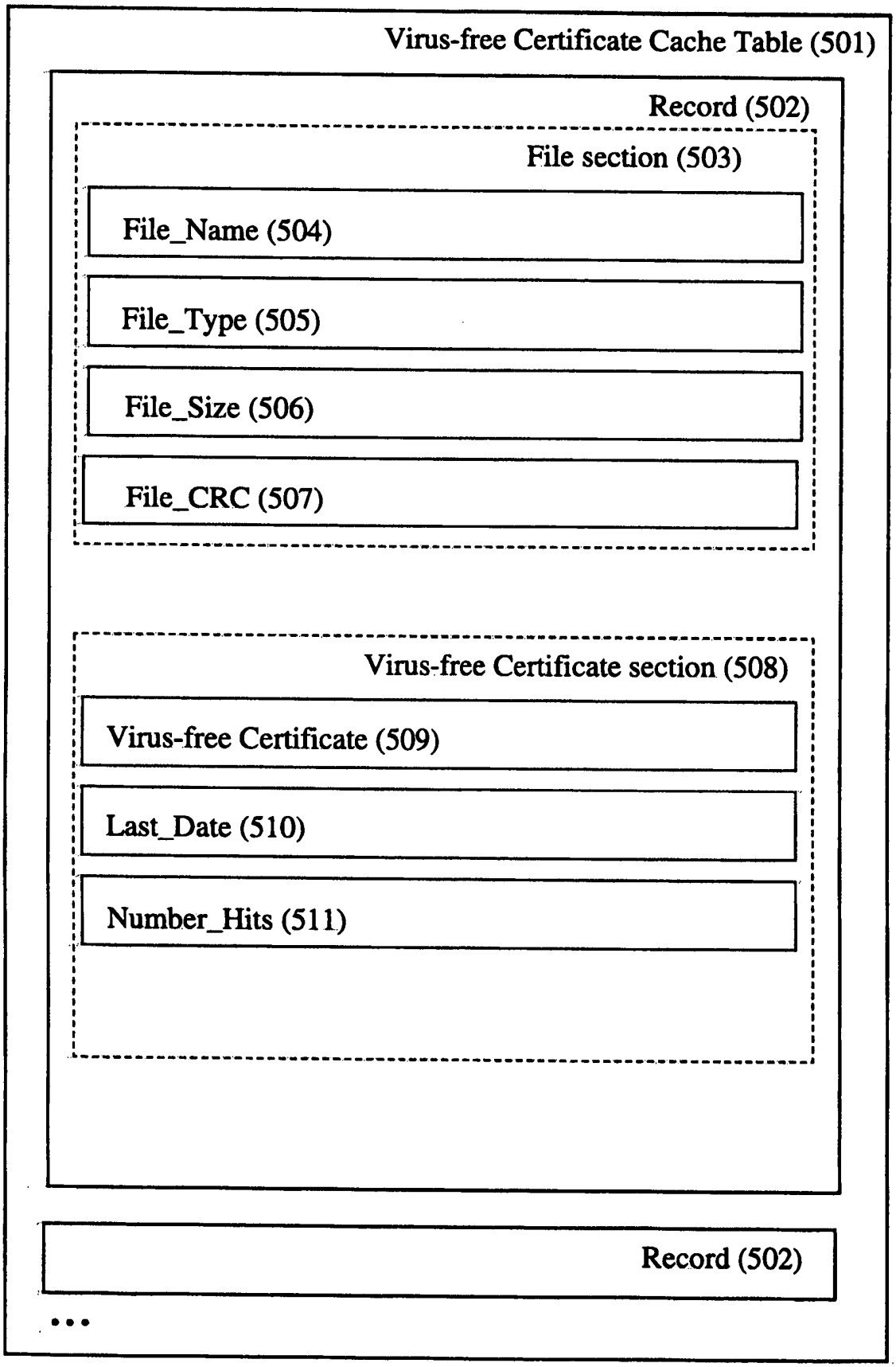
FIG. 1

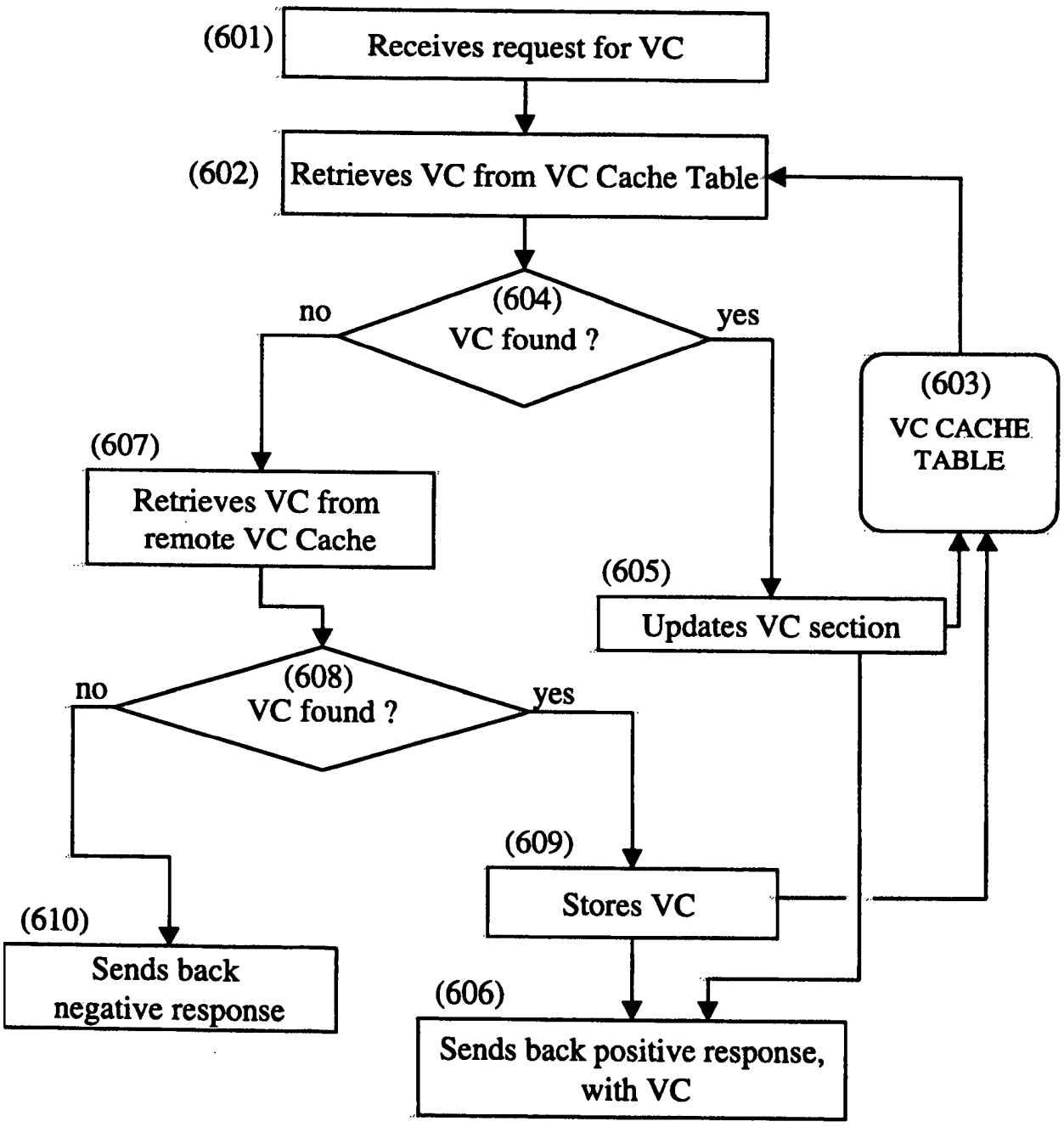
VIRUS-FREE CERTIFICATE (200)

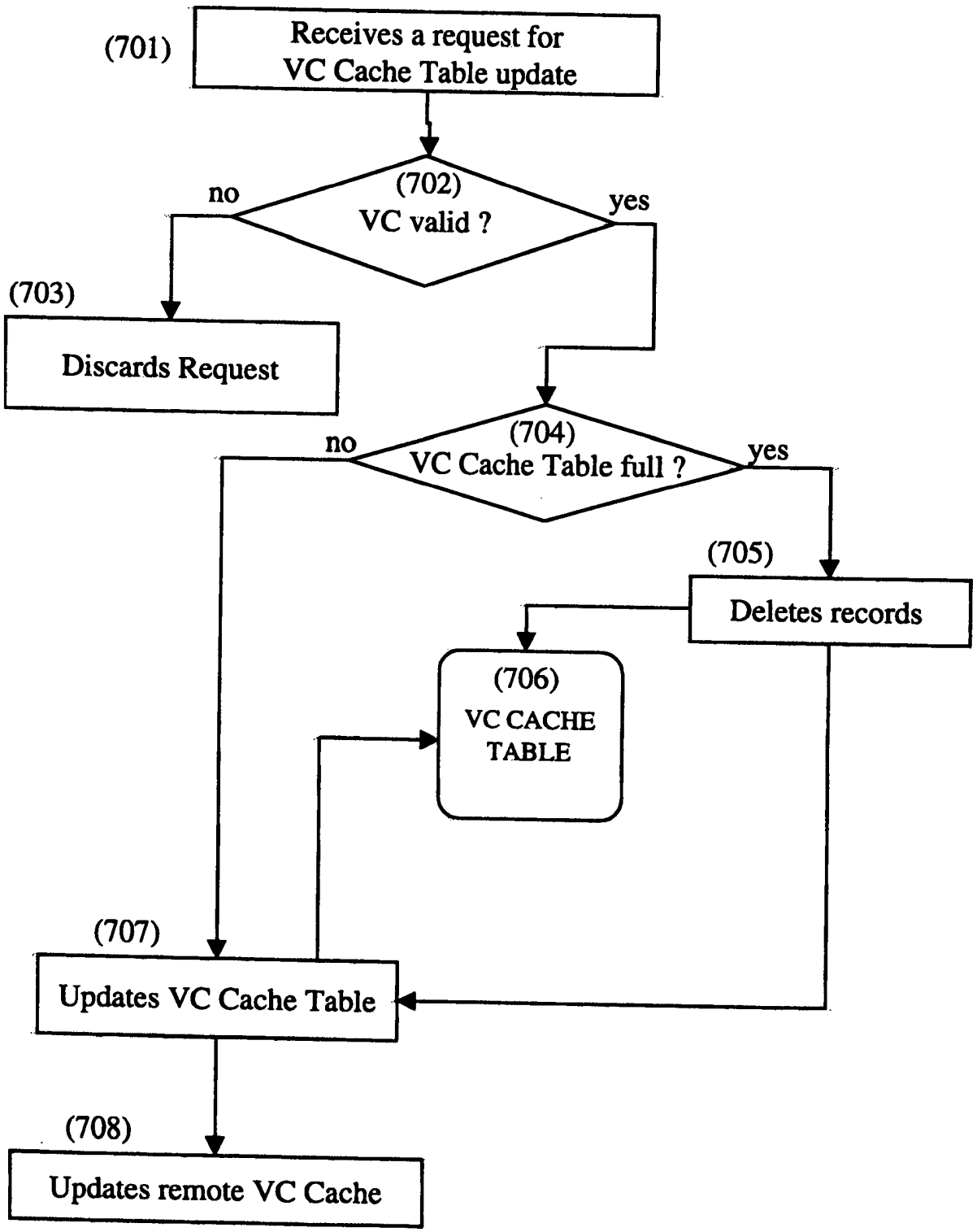
(201)	FILE NAME
(202)	ISSUER
(203)	PUBLIC KEY VALUE
(204)	VALIDITY
(205)	SERIAL NUMBER
(206)	CERTIFICATE SIGNATURE
(207)	FILE SIGNATURE
(208)	ANTIVIRUS CHECKER 1
	ANTIVIRUS CHECKER n
(209)	CERTIFICATE STRUCTURE


Virus-free Certificate Rules Table (301)
Record (302)
File Template section (303)
File_Source (304)
File_Name (305)
File_Type (306)
File Antivirus Criteria section (307)
VC_Required (308)
Valid_VC_Required (309)
File_Discard (310)
Required_AV_Checker_List (311)
Record (302)
...


(401) Receives file
(402) Retrieves antivirus criteria
(403) VC RULES TABLE
(404) VC found ?
no
yes
(415) VC required ?
(405) VC valid ?
(414) VC from VC Cache ?
(419) Forwards file
(416) Stores info
(406) AV processing OK ?
(417) Discard required?
(420) Retrieves VC, from VC Cache
(418) Discards file
(407) Signature OK ?
(421) VC retrieved ?
(410) Stores info
(411) Retrieves VC, from VC Proxy
(412) VC retrieved and OK?
(413) Discards file
(408) Updates VC Cache
(409) Forwards file, with VC


Virus-free Certificate Cache Table (501)
Record (502)
File section (503)
File_Name (504)
File_Type (505)
File_Size (506)
File_CRC (507)
Virus-free Certificate section (508)
Virus-free Certificate (509)
Last_Date (510)
Number_Hits (511)
Record (502)


(601)
Receives request for VC
(602)
Retrieves VC from VC Cache Table
(604)
VC found ?
no
yes
(603)
VC CACHE TABLE
(607)
Retrieves VC from remote VC Cache
(605)
Updates VC section
(608)
VC found ?
no
yes
(609)
Stores VC
(610)
Sends back negative response
(606)
Sends back positive response, with VC


(701)
Receives a request for VC Cache Table update
(702)
VC valid ?
no
yes
(703)
Discards Request
(704)
VC Cache Table full ?
no
yes
(705)
Deletes records
(706)
VC CACHE TABLE
(707)
Updates VC Cache Table
(708)
Updates remote VC Cache

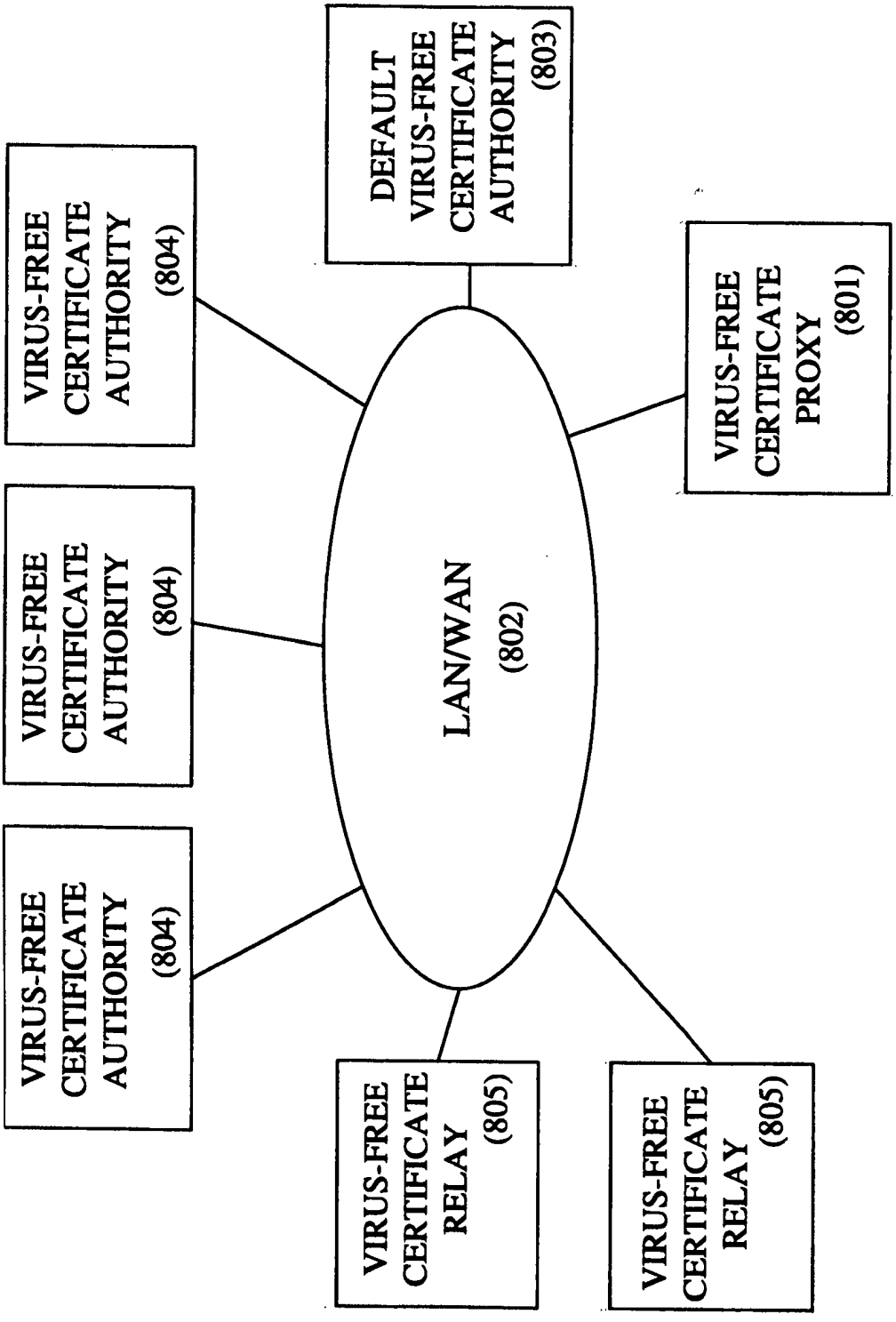
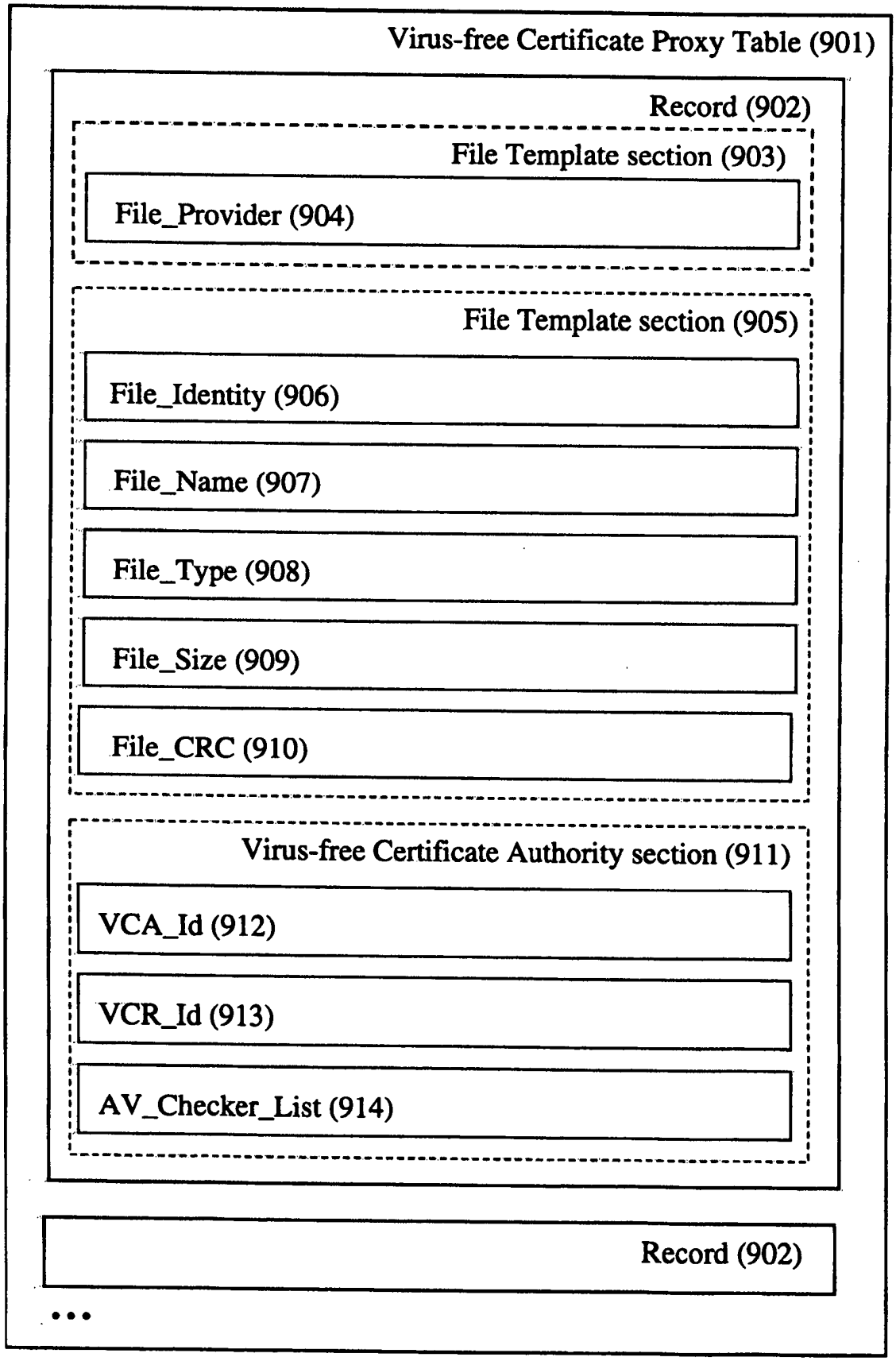
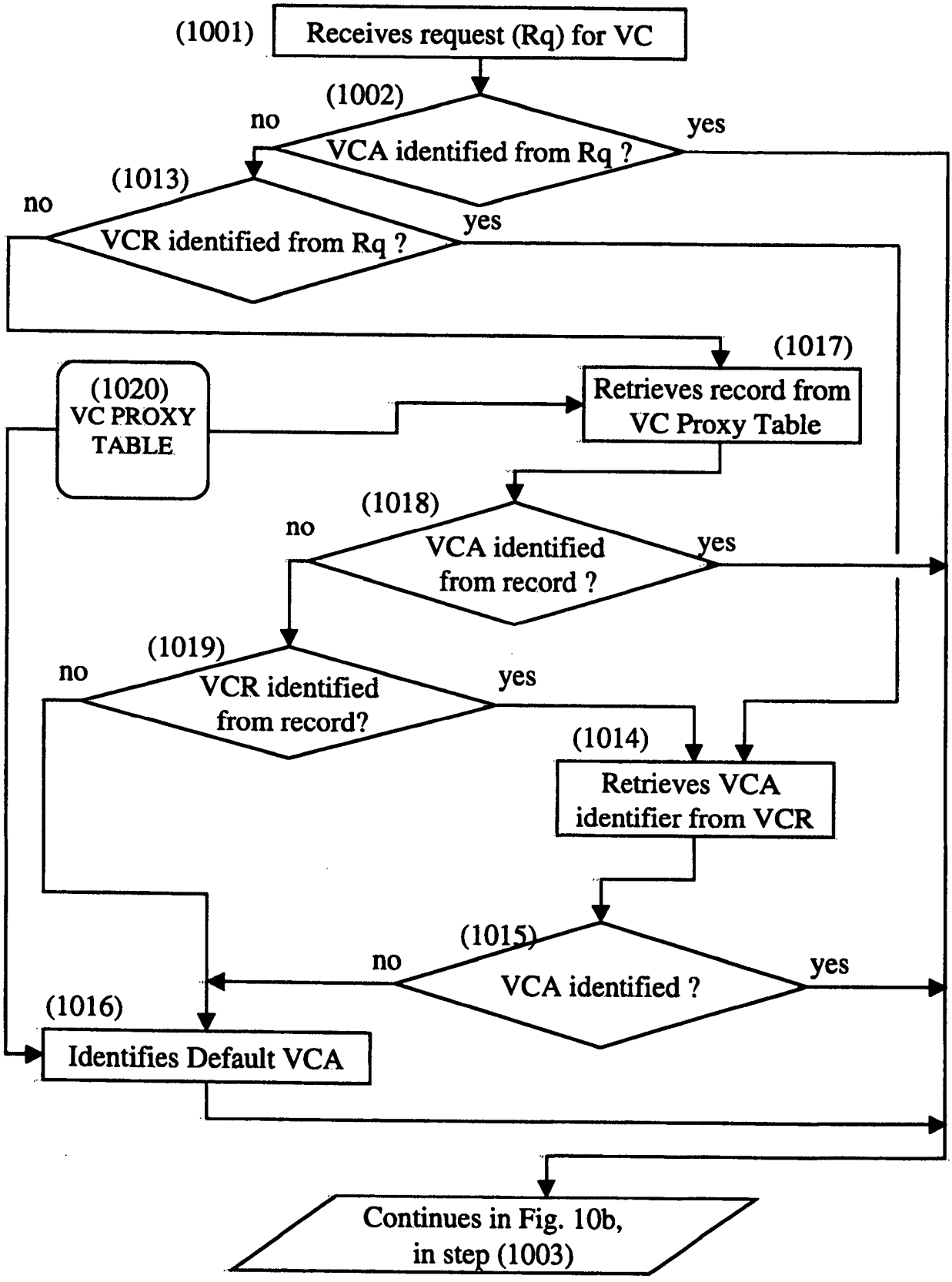
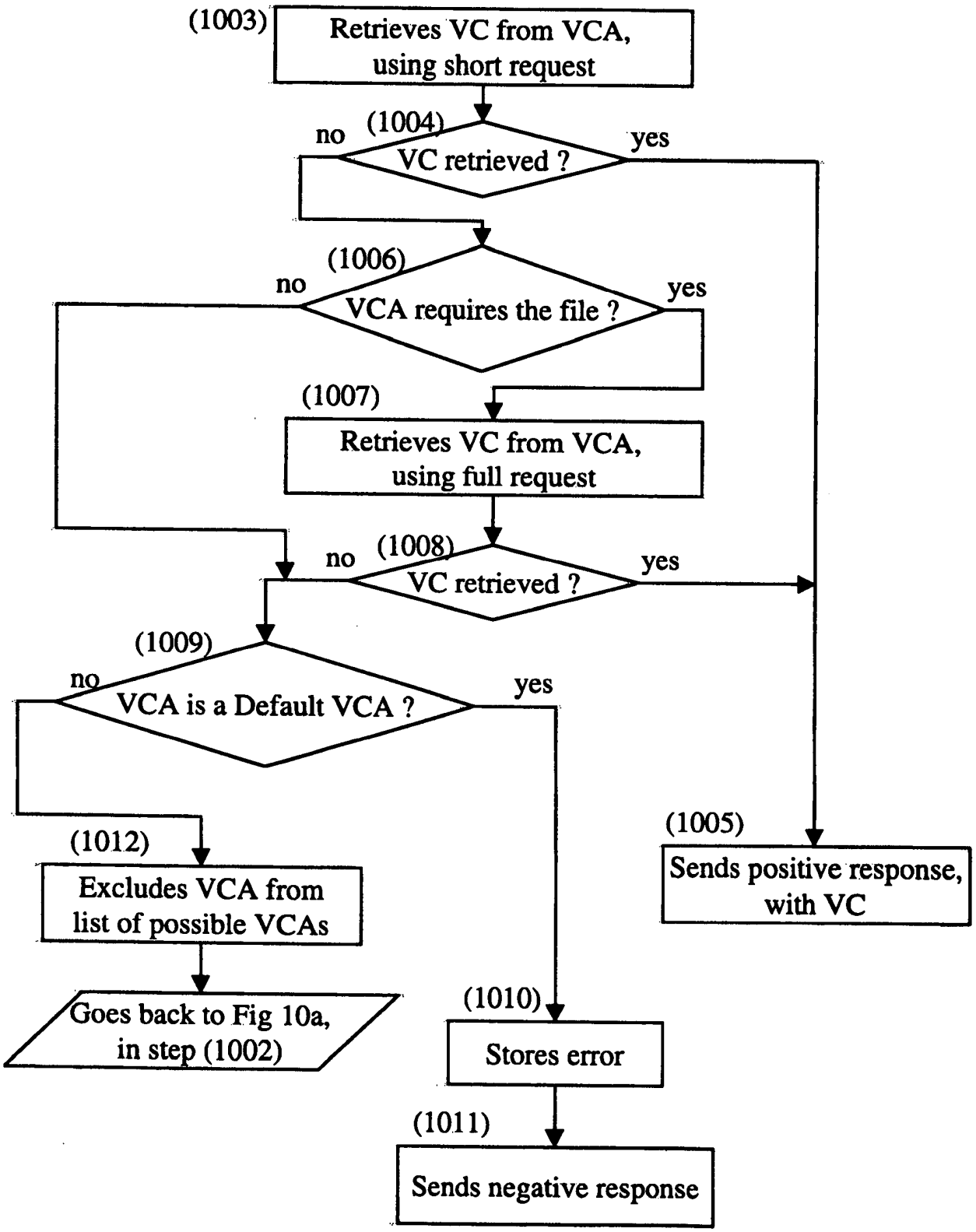

LAN/WAN
(802)
DEFAULT VIRUS-FREE CERTIFICATE AUTHORITY (803)
VIRUS-FREE CERTIFICATE PROXY (801)
VIRUS-FREE CERTIFICATE AUTHORITY (804)
VIRUS-FREE CERTIFICATE AUTHORITY (804)
VIRUS-FREE CERTIFICATE AUTHORITY (804)
VIRUS-FREE CERTIFICATE RELAY (805)
VIRUS-FREE CERTIFICATE RELAY (805)

FIG. 8


Virus-free Certificate Proxy Table (901)
Record (902)
File Template section (903)
File_Provider (904)
File Template section (905)
File_Identity (906)
File_Name (907)
File_Type (908)
File_Size (909)
File_CRC (910)
Virus-free Certificate Authority section (911)
VCA_Id (912)
VCR_Id (913)
AV_Checker_List (914)
Record (902)
...


(1001)
Receives request (Rq) for VC
(1002)
VCA identified from Rq ?
no
yes
(1013)
VCR identified from Rq ?
no
yes
(1017)
Retrieves record from VC Proxy Table
(1020)
VC PROXY TABLE
(1018)
VCA identified from record ?
no
yes
(1019)
VCR identified from record?
no
yes
(1014)
Retrieves VCA identifier from VCR
(1015)
VCA identified ?
no
yes
(1016)
Identifies Default VCA
Continues in Fig. 10b, in step (1003)


(1003)
Retrieves VC from VCA, using short request
(1004)
no
VC retrieved ?
yes
(1006)
no
VCA requires the file ?
yes
(1007)
Retrieves VC from VCA, using full request
(1008)
no
VC retrieved ?
yes
(1009)
no
VCA is a Default VCA ?
yes
(1012)
Excludes VCA from list of possible VCAs
Goes back to Fig 10a, in step (1002)
(1005)
Sends positive response, with VC
(1010)
Stores error
(1011)
Sends negative response